

REMARKS

5.

ON

ONE HUNDRED AND FIFTY OPERATIONS

FOR

EXTRACTION OF CATARACT.

BY

CHARLES HIGGENS, F.R.C.S.E.,

OPHTHALMIC ASSISTANT SURGEON, GUY'S HOSPITAL; LECTURER ON
OPHTHALMOLOGY, GUY'S HOSPITAL MEDICAL SCHOOL.

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(Received January 14th—Read March 11th, 1879.)

IN the table which accompanies this paper I have put down the leading facts with the results of a hundred and fifty extractions of cataract performed on a hundred and thirty patients; in the table two numbers bracketed together signify two eyes of the same individual. Seventy-one of the patients were males and fifty-nine were females.

The results are comprised under three heads: successful, partially successful, and failure. Under the first are placed all eyes that could read print varying in size from $D = 0.5$, to $D = 4$ of Snellen's test types at a distance of from 20 cm. to 50 cm., and had vision for distance $= \frac{6}{6}$ to $\frac{6}{60}$, or could tell the time on a watch within a fortnight or three weeks of the operation, aided in each case by a suitable convex lens. As far as No. 112 in the table the old edition of Snellen's types and lenses numbered by focal lengths were used, in

those after No. 112 the new edition of types and metrical lenses.

Under the second head come eyes which could count fingers and distinguish one from the other; thus, tell the thumb from the fingers, the small from the forefinger, also whether the front or back of the hand was looked at, or had vision enough to enable the patient to go about without a guide.

Under the third head are placed those eyes which saw no better, or worse, than before the operation.

The number of eyes in which the operation was successful is one hundred and fifteen, 76·6 per cent of the whole; partially successful, twenty-four, 16 per cent; failures, eleven, 7·3 per cent. So that in 92·6 per cent the patients were the better for the operation.

The ages of the patients varied between three and eighty years. One hundred and twenty-four of the cataracts were nuclear, twenty-six cortical. By nuclear I mean that form of cataract met with in persons past the middle of life, in which the nucleus or central part of the lens is opaque and hard, the cortical layers being opaque but rather softened, the opacity of the nucleus being often first in point of time, frequently described as senile or hard cataract.

By cortical I mean the form met with in young people, and at all ages from injury, in which the opacity commences in the cortical layers of the lens, and subsequently invades the nucleus, the whole being of a consistency varying between a gelatinous and completely fluid condition, often described as juvenile or soft cataract.

The methods of extraction were three—small flap section upwards, or downwards, associated with iridectomy, one hundred and four; linear section upwards, or downwards, also associated with iridectomy, twenty-five; oblique corneal section downwards, as a rule without iridectomy, twenty-one. In the two first the iridectomy was, as a rule, performed at the time of extraction, but in several cases as a preliminary some weeks or months previously.

In six cases a traction instrument, scoop, or sharp hook

was required to remove the lens. In five vitreous was lost. Secondary operations—iridectomy, or tearing through opaque capsule—were required in twenty-nine (19·3 per cent). Iritis, sufficient to cause impairment of vision, occurred in twenty-four cases (16 per cent.). Anæsthetics were given in one hundred and twenty-eight, the operation was performed without in twenty-two cases.

The number of cases is too small to enable me to draw comparisons between different methods of operating, and I do not pin my faith exclusively to any one, but my impression is that the extraction by small flap section with iridectomy is that which is best suited to the majority of cases.

The operation with upward section is performed as follows:—The patient is placed in the supine position, brought thoroughly under the influence of an anæsthetic, the lids held open by a wire speculum, the globe fixed by holding the conjunctiva and subconjunctival fascia near the lower corneal margin with the fixing forceps, and drawn gently downwards. A Graefe's knife is then entered in the sclero-corneal junction on the outer side of the globe at a point midway between the upper margin of a moderately contracted pupil and the upper border of the cornea; the surfaces of its blade being kept parallel to the plane of the iris, it is pushed gently and slowly across the anterior chamber, and its point brought out at a spot on the inner side of the globe corresponding to that of entrance on the outer; then by a gradual sawing movement the knife is made to cut its way out upwards, the line of section corresponding as nearly as possible to the sclero-corneal junction, encroaching on neither cornea nor sclera; thus a flap comprising about one third of the cornea is formed. Iridectomy is then performed (if it has not been already done as a preliminary), but the piece of iris removed need not be large. My object is to make a pupil which resembles as nearly as possible an ordinary key-hole in form; should the eye turn upwards it must be drawn down by an assistant during the removal of the piece of iris, but I never let any one else

touch the eye if I can possibly avoid it. The next step in the operation is the laceration of the lens capsule. For this purpose I use a small sharp hook with flexible stem, which can be bent to any required angle, and which is gilded, so that it can be seen when in the anterior chamber much more distinctly than white metal or steel. A few scratches with the hook tear up the capsule most satisfactorily.

The cataract is removed by gently pressing with the curette upon the globe, which is drawn downwards if necessary, just below the inferior margin of the cornea. The bulk of the lens having escaped care is taken by gently pressing on the cornea from all sides towards the centre to get any soft cortical matter which may remain behind the iris into the pupil, and then gently press it out through the incision. So soon as the pupil appears black and clear the speculum is removed and the eye carefully closed, two small folds of lint wetted in cold water are then placed upon the lids of both eyes, and the whole secured by a bandage which has been made by Mr. Dunnage, surgeon to the Central London Ophthalmic Hospital.

In extraction by linear section the details of the operation differ from the small flap only in the form and position of the incision. Puncture and counter-puncture are made in the sclerotic beyond the sclero-corneal margin, at points in a line rather below the upper margin of the cornea. The Graefe's knife is entered and passed across the anterior chamber with the surfaces of its blade parallel to the plane of the iris, but as soon as its point has emerged on the inner side of the globe its edge is turned straight forwards and made to cut its way out just within the sclero-corneal margin.

In extraction by oblique corneal section no speculum or fixing forceps are used, but the lids are held open, and the globe steadied by the fingers. The section is made downwards by transfixing the globe with a Graefe's knife through the sclero-corneal margin, the puncture and counter-puncture being in a line rather below the centre of the pupil.

The edge of the knife during its introduction and passage across the anterior chamber is directed forwards so that the surface of the blade forms an angle of about 45° with the plane of the iris. As soon as its point has fairly emerged on the inner side of the globe it is made to cut its way out, by a gradual sawing movement, through the cornea, about midway between the lower border of the pupil and the sclero-corneal margin. As a rule no iridectomy is performed, but in cases where the pupil does not readily dilate it is well to remove a small portion of iris from its margin; the capsule is lacerated with the sharp hook, the cataract removed by making pressure with the forefinger of one hand upon the upper lid drawn up just enough to clear the upper margin of the cornea, aided by pressure similarly applied below with a finger of the other hand upon the lower lid. Any soft matter that may remain after the bulk of the cataract has escaped is carefully pressed out, the iris, if it has prolapsed, returned with the curette, and both eyes bandaged as after the small flap extraction.

The small flap section has, in my opinion, the following advantages:—The wound is made in a portion of the eyeball the vascular supply of which renders its healing power very great, and the flap being small the chance of suppuration is but slight. The risk of loss of vitreous at the time of the operation, or of choroido-iritis subsequently, is less than in linear section. The alteration in curvature of the cornea is not so great as after oblique corneal section.

With regard to the relative advantages of upward and downward sections, so far as vision is concerned, that for reading or near work is equally good in either; distant vision, however, is not quite as good after the latter as the former. In some cases where both eyes have been operated on in the same patient I have done one with upward, the other with downward section, and the former gave the best vision for distance, while for reading sight was equally good in both. The reason of this is, firstly, that from the size of the pupil, which instead of being to a great extent covered by the upper lid, lies, when the eyes are directed straightforwards,

entirely in the palpebral aperture, too much light enters the eye and causes confusion. Secondly, the patient looks through a portion of the cornea which may have become irregular from the cicatrix of the wound.

Other disadvantages of downward section are:—The wound is not so well covered by the upper lid as in upward section, and from its position is liable to be irritated by the lower lashes should entropion occur. If closure of the pupil or opacity of the cornea take place there is a difficulty in making an artificial pupil, as the greater part of the normal cornea and iris lie beneath the upper lid, by which the new pupil would be covered. The downward section, however, has this great advantage, it renders the operation of extraction extremely simple and easy, and lessens to an immense extent the risk of accidents during its performance. Thus, there is no necessity for the use of a speculum, or if one is used it can be removed so soon as the section is completed; it is never necessary to draw the eyeball downwards when performing the iridectomy, or, indeed, to touch it with fixing forceps after completion of the section. The cataract can be removed by pressure with the fingers upon the partially closed lids instead of by an instrument applied directly to the eyeball as in upward section; and, lastly, should an accident happen, such as escape of vitreous or displacement of the cataract necessitating the introduction of a traction instrument, the section is in such a position that the requisite manipulations can be carried out without touching the eyeball with forceps.

My practice is in all cases where I expect any difficulty, or operate without anæsthesia, to make my section downwards, as a rule employing no speculum or fixing forceps, but holding the lids open and steadying the globe with my fingers. In plain straightforward cases, and with anæsthesia, I make my section upwards, keeping the lids open by a speculum, and fixing the globe with forceps.

With regard to the performance of iridectomy I rarely extract without it. Some of my cases of oblique corneal section gave brilliant results, but such are the exception,

the rule being that a prolapse of iris takes place which most probably renders an iridectomy necessary at some time or other, and at least causes a considerable amount of irritation and leaves an anterior synechia, but may even set up glaucomatous change and destroy the eye.

The greater part of my experience of extraction without iridectomy has been gained from the practice of others; I have, however, seen enough of it to determine me to perform the operation but rarely, although the cases in which I have done it were, on the whole, very satisfactory.

My rule is in cases of mature cataract to perform iridectomy at the time of extraction, in immature as a preliminary as long before the lens is removed as possible, and in cases where the nucleus of the lens alone is opaque I make the artificial pupil downwards, as in this position it considerably improves vision so long as the margin of the lens remains clear.

In the selection of cases for operation I keep in view only two points; 1st, that the perception of light is good; 2nd, that the greater part of the lens is opaque. In several of the cases contained in the table the cataract was associated with disease of the deeper structures of the globe, chiefly the choroid; such form a large proportion of the partially successful cases, the remainder being accounted for by dense capsular obstruction, iritis, changes in the vitreous and choroid after extraction.

The causes of failure were suppuration of the cornea or whole eyeball, severe choroido-iritis, and such a condition of the deeper parts of the globe, that no improvement of vision resulted, though the cataract was removed without difficulty and no subsequent complication occurred.

My after-treatment of extraction cases is extremely simple; both eyes are bandaged as already described, and the lint is kept constantly wet by dripping cold, iced or warm water, upon the outside of the bandage as often as may be requisite. In most cases I use cold water, but if I have had any trouble during the operation, or for any reason expect inflammatory changes, a lump of ice is kept in the vessel from which the

water is taken ; in old and feeble persons I use warm water. At the end of the second day the pieces of lint are changed, but I never attempt to open either eye till the end of the first week, and not always then ; if the eyelids retain their natural appearance I am quite satisfied ; if the patient opens the eyes himself even so soon as the day after the operation I have no fear, for he will not do so unless all is going exceptionally well.

I keep the patient in bed for four days, at the end of the week let him have the sound eye untied, and wear a large green shade over both ; the eye operated upon is kept bandaged for three weeks, the lint being kept constantly wet for the first fortnight ; the shade is worn until all undue vascularity has subsided ; at the end of a month vision is carefully tested, and glasses are given about two months after the operation.

If, shortly after the operation, pain is complained of, and I notice that the eyelids are becoming red and swollen I suspect iritis or commencing suppurative oorneitis ; I then order belladonna lotion to be used instead of water, apply leeches to the temples, and in some cases give mercury and opium internally. I also see that the lower lid is not inverted, but do not open the eye ; if entropion is found, strapping is applied so as to keep the lid in place ; this failing, a portion of skin and orbicularis muscle is removed.

Table of One Hundred and Fifty Operations for Extraction of Cataract.

No.	Sex.	Age.	Eye.	Form of cataract.	Operation.	Result.	Remarks.
1	M.	70	L.	Nuclear	Oblique corneal section downwards	Circular movable pupil. $S 2 C + 3\frac{1}{2}$	Eye was myopic before operation; <i>no anæsthetic</i> .
2	F.	76	L.	"	Small flap downwards, with iridectomy	$S 2 C + 2\frac{1}{2}, \frac{20}{100} C + 3$	Had iritis for some weeks.
3	M.	70	L.	"	Small flap section upwards; iridectomy	$S 1\frac{1}{2} C + 2\frac{1}{2}, \frac{20}{100} C + 3\frac{1}{2}$	
4	F.	65	R.	"	Small flap downwards; preliminary iridectomy	$S 2 C + 2\frac{1}{2}, \frac{20}{100} C + 3$	Cataract immature in both eyes; preliminary iridectomy downwards in both eyes three weeks before extraction in first eye; <i>some vitreous lost in left; no anæsthetic</i> .
5	F.	"	L.	"	Ditto	$S 3 C + 2\frac{1}{2}, \frac{20}{100} C + 3$	High degree of hypermetropia; had worn $\times 9$ for going about for some years.
6	M.	73	R.	"	Small flap upwards; iridectomy	$S 1\frac{1}{2} C + 2, \frac{20}{100} C + 2\frac{1}{2}$	Eye had been blind twenty years.
7	F.	78	R.	"	Ditto	$S 2 C + 3, \frac{20}{100} C + 4$	
8	F.	68	R.	"	Linear section upwards; iridectomy	$S 2\frac{1}{2} C + 3, \frac{20}{100} C + 4$	
9	M.	63	R.	"	Oblique corneal section downwards; no iridectomy	$S 6 C + 2\frac{1}{2}$	Had a violent attack of iritis, which left numerous adhesions of iris to parts behind; pupil opened with sharp hook; <i>no anæsthetic</i> .
10	M.	69	L.	"	Linear section upwards; iridectomy	$S 4\frac{1}{2} C + 2\frac{1}{2}, \frac{20}{100} C + 3$.	Severe iritis L.E.; pupil became entirely occluded; iris cut across from side to side with Wecker's scissors; clear pupil obtained.
11	M.	"	R.	"	Ditto	Counts fingers, and can tell one from the other	
12	M.	57	L.	"	Small flap section upwards; iridectomy	$S 2\frac{1}{2} C + 2\frac{1}{2}, \frac{20}{100} C + 3$	Preliminary iridectomy downwards in right eye at same time.
13	M.	"	R.	"	Small flap downwards; iridectomy	$S 6\frac{1}{2} C + 2\frac{1}{2}, \frac{20}{100} C + 3$	Vitreous bulged, but none escaped; iritis; pupil closed; iridectomy upwards.
14	M.	60	L.	"	Oblique corneal section downwards	Time on watch. $C + 2\frac{1}{2}$.	Vision was tested a week after operation in second eye, a fortnight after that in first. Patient died three weeks later, and post-mortem aortic aneurism was found. He took the anæsthetic very badly on each occasion.
15	M.	"	R.	"	Ditto	Pupils circular	

No.	Sex.	Age.	Eye.	Form of cataract.	Operation.	Result.	Remarks.
16	M.	53	L.	Nuclear	Linear section upwards;	S 2 C + 2½, 2½ C + 3	Neither lens entirely opaque, but had no useful vision; iridectomy performed downwards in right eye at same time.
17	M.	"	R.	"	Small flap section downwards; iridectomy had been already performed		
18	M.	80	L.	"	Oblique corneal section downwards	2½ C + 3	Sphincter of pupil removed, as it would not dilate to allow escape of lens; <i>no anæsthetic</i> .
19	M.	69	R.	"	Linear section upwards; iridectomy	S 2 C + 2½, 2½ C + 3½.	Cataract immature in both eyes; no useful vision; iridectomy performed downwards in right eye at time of extraction in left. Pupil in left became blocked by inflammatory material, which was subsequently torn through with two needles.
20	F.	70	R.	"	Ditto	S 3 C + 2½, 2½ C + 3½.	
21	M.	75	L.	"	Ditto	Can count and distinguish fingers; sees to go about	
22	F.	73	L.	"	Ditto	Both eyes can count and distinguish fingers; sees to go about	Both eyes were operated on at the same time; had entropion of both lower eyelids and severe iritis, which closed the pupils in both; operated on for entropion; subsequently double iridectomy in both eyes.
23	F.	"	R.	"	Oblique corneal section downwards		
24	M.	38	R.	Cortical	Small flap section downwards. Preliminary iridectomy ten months previously	S 1½ C + 4½, 2½ C + 10	Both eyes stellate; opacity near anterior and posterior surfaces of both lenses; iridectomy downwards in both; improved vision for a time; always myopic; extensive atrophy of choroid in left. The right lens became rapidly entirely opaque ten months after iridectomy.
25	M.	14	R.	Cortical (lamella)	Small linear section upwards; iridectomy	Has never learnt to read; can see letters of 40 at 20 ft. C + 3	Patient has the rocky teeth described by Mr. Hutchinson. Had fits in infancy, for which he took powders. The left eye is affected, but

27	F.	30	L.	"	Small linear section upwards; iridectomy	Can count and distinguish fingers, and see to go about	riangles; the cataract was probably secondary to choroidal disease. The cataract was partially fluid, but there was a considerable gelatinous nucleus. Much opacity in vitreous was subsequently found; vision was improving when patient was last seen.
28	M.	65	R.	Nucleus	Oblique corneal section	Never learnt to read; spells 50 at 20 feet C + 3	Opaque capsule had to be torn through with two needles.
29	F.	63	L.	"	Linear section upwards; iridectomy	Only knows letters; can spell S 6½ C + 4½, ⅔ C + 5	Some corneal opacity. Right eye myopic; much floating opacity in vitreous; large posterior staphyloma; very imperfect vision; iridectomy performed downwards at time of extraction in left.
30	F.	48	L.	"	Small flap section upwards; iridectomy	S 3 C + 4, ⅔ C + 6	Patient always near-sighted; considerable corneal opacity in right eye.
31	F.	64	L.	"	Linear section upwards; iridectomy	S 1½ C + 2½, ⅔ C + 3	Two needle operations for opaque capsule.
32	M.	76	L.	"	Small flap section downwards; preliminary iridectomy	S 5½ C + 2½	The pupil was entirely blocked and adherent to lens capsule. The right eye had been lost after extraction some years previously; globeshrunken to small irregular mass. Double iridectomy, upwards and downwards, in left; cataract extracted a month later; had iritis, followed by blocking of pupil; remains of iris removed; subsequently opaque capsule torn through with two needles; clear pupil obtained.
33	M.	62	R.	"	Linear section upwards; iridectomy	Counts fingers; sees to go about	Closed pupil from iritis after extraction; double iridectomy performed.
34 } 35 }	M. M.	60 "	R. L.	" "	Ditto Small flap upwards; iridectomy	S 3½ C + 2½, ⅔ C + 3. S 2 C + 2½, ⅔ C + 3.	
36	M.	58	L.	"	Oblique corneal section downwards. Sphincter of pupil removed	Cannot read; makes out the letters of S 1½ C + 2½; spells 40 at 20 feet C + 3.	<i>No anæsthetic.</i>

No.	Sex.	Age.	Eye.	Form of cataract.	Operation.	Result.	Remarks.
37	F.	66	L.	Cortical	Small flap section downwards; iridectomy	Cannot read; threads small needle C + 2½; spells 40 at 20 feet C + 3.	
38	M.	—	—	"	Ditto	Eye lost	Patient was in an advanced stage of diabetes.
39	M.	50	R.	"	Oblique corneal section downwards. Sphincter of pupil removed	S 3 C + 2½, 2/10 C + 3	Cornea suppurated. <i>No anæsthetic.</i>
40 } 41 }	M. M.	61 "	R. L.	"	Ditto	S 1½ C + 2½, 2/10 C + 3½.	
42	M.	43	R.	"	Small flap section downwards; iridectomy	2/40 C + 4½.	
43	F.	60	R.	"	Small flap section upwards; iridectomy	S 2 C + 2, 2/10 C + 2½.	
44	F.	26	L.	"	Ditto	S 1½ C + 2½, 2/10 C + 3.	
45	M.	44	L.	Nuclear	Small flap section downwards; iridectomy	Bare perception of light	Cataract shrunken, adherent; had to be removed by sharp hook; vitreous fluid, some escaped.
46	F.	55	R.	"	Small flap section downwards and outwards; preliminary iridectomy	Counts fingers; can find his way about	Iridectomy had been performed some months before; cataract was secondary to choroidal disease.
					Linear section upwards; iridectomy	S 3½, C + 2½, 2/10 C + 3	This patient had a severe attack of iritis in both eyes four months after the extraction of the cataract; the pupil was closed; iridectomy, and afterwards a needle operation, were performed. She can now see to go about, but cannot read.
47	F.	69	L.	"	Small flap upwards; iridectomy	S 1½ C + 2½, 2/10 C + 3	
48	M.	31	L.	Cortical (traumatic)	Small linear section upwards; iridectomy	S 1½ C + 2½, 2/10 C + 3.	
49	F.	14	R.	"	Ditto	S 2½ C + 2½.	
50	M.	60	L.	Nuclear	Linear section downwards; preliminary iridectomy	Counts fingers; sees to go about	Had marks of past iritis in both eyes; lenses only partially opaque; no useful vision. Pupil became blocked by iritis after extraction; iridectomy upwards.

52	M.	64	R.	"	wards; iridectomy	Counts fingers; sees to go about	Patient gouty; subject to iritis; pupil became blocked in right eye; iridectomy performed upwards; opaque membrane cut across with scissors; <i>no anæsthetic</i> .
53	M.	"	L.	"	Ditto	Eye lost	Left eye cornea suppurated; <i>no anæsthetic</i>
54	M.	73	R.	"	Small flap section upwards; iridectomy	Ditto	Cornea suppurated.
55	M.	15	L.	Cortical (traumatic?)	Small linear section upwards; iridectomy	S 2 C + 2½, $\frac{2}{6} \frac{0}{0}$ C + 3	Injury twelve months before operation, but cataract had only been noticed four months before.
56	F.	64	L.	Nuclear	Small flap section upwards; iridectomy	S 2½ C + 2½, $\frac{2}{6} \frac{0}{0}$ C + 3.	
57	F.	62	L.	"	Ditto	S 3½ C + 2½, $\frac{2}{6} \frac{0}{0}$ C + 3.	
58	M.	19	R.	Cortical	Small linear section upwards; iridectomy	S 2 C + 2½, $\frac{2}{6} \frac{0}{0}$ C + 4.	
59	M.	57	R.	Nuclear	Large flap section downwards; iridectomy	Distinguishes large objects, as hand, held in front of eye	Microphthalmos; coloboma of iris. Right eye blind forty years; left failed during last two years. Corneal opacity; small piece of iris removed by side of coloboma in right when extraction was performed; had iritis; pupil became blocked; iridectomy performed upwards.
60	M.	"	L.	"	Large flap section upwards; iridectomy	S 12 C + 2½; sees to go about easily. C + 3	Left hæmorrhage in vitreous some months after extraction. Coloboma of choroid in both eyes.
61	F.	3	R.	Cortical	Small linear section upwards; iridectomy	Pupil clear; optic disc visible; appears to see well; too young to be tested with lenses	
62	M.	57	L.	Nuclear	Small flap section upwards; iridectomy	S 2½ C + 3, $\frac{2}{6} \frac{0}{0}$ C + 3½	
63	M.	5	R.	Cortical	Ditto	Clear pupil; optic disc visible	Signs of old iritis.
64	M.	18	R.	"	Small linear section upwards; iridectomy	S 1½ C + 2½, $\frac{2}{4} \frac{0}{0}$ C + 3.	
65	F.	58	R.	Nuclear	Oblique corneal section downwards	S 2 C + 2½, $\frac{7}{6} \frac{0}{0}$ C + 3.	<i>No anæsthetic</i> .

No.	Sex.	Age.	Eye.	Form of cataract.	Operation.	Result.	Result.
66	F.	26	R.	Cortical	Linear section upwards; iridectomy	Counts fingers; sees to go about	Iridectomy downwards; two needle operations on opaque capsule.
67	F.	57	R.	Nuclear	Small flap section downwards; preliminary iridectomy	S 12 C + 2½	Numerous posterior synechia; pupil became closed after extraction; iridectomy upwards; needle operation on opaque capsule.
68	F.	62	R.	"	Ditto	20/70 C + 3.	
69	M.	67	R.	"	Small flap section upwards; iridectomy	S 1½ C + 2½, 20/30 C + 3.	
70	F.	52	L.	"	Oblique corneal section downwards; iridectomy	S 3½ C + 2½, 20/70 C + 3½.	
71	F.	61	R.	"	Oblique corneal section downwards; preliminary iridectomy	S 2 C + 2½, 20/70 C + 3	No anæsthetic. Vitreous fluid, some lost. Left lens was removed with scoop, <i>no vitreous lost</i> ; iritis; closed pupil; subsequent iridectomy upwards. Both eyes were myopic, and there were considerable atrophic changes in the choroid in left.
72	F.	"	L.	"	Small flap section downwards; preliminary iridectomy	Counts fingers; sees to go about	
73	F.	72	R.	"	Ditto	Counts fingers; can find his way about	Had severe iritis on several occasions before extraction. Both eyes were twice iridectomized; cataract was removed with sharp hook; subsequent severe attack of iritis; <i>no anæsthetic</i> .
74	M.	60	R.	Nuclear	Linear section downwards; preliminary iridectomy	Counts fingers; sees to go about	
75	F.	61	L.	"	Oblique corneal section downwards; small iridectomy	S 1½ C + 2½, 20/30 C + 3.	
76	F.	66	R.	"	Small flap section upwards; iridectomy	S 4½ C + 2½.	
77	M.	67	R.	"	Small flap downwards; iridectomy	S 2 C + 2½, 20/30 C + 3.	
78	M.	19	R.	Cortical (traumatic?)	Small flap section upwards; iridectomy	S 2½ C + 2½, 20/30 C + 3½.	

80	M.	R.	"	wards; iridectomy	Ditto			both eyes had clear pupils, but patient was never tested with glasses, as he died from bronchitis three weeks after the last operation. Cornea suppurated.
81	F.	75	"	Small flap section upwards; iridectomy	Eye lost			
82	F.	"	"	Ditto	Ditto			Choroido iritis.
83	M.	44	"	Oblique corneal section downwards; no iridectomy	Cannot read; spells 30 at 20 feet c + 3			No anæsthetic.
84	F.	63	"	Ditto	S 2 c + 3 $\frac{1}{2}$, $\frac{2.0}{2.0}$ c + 5			No anæsthetic. Pupil circular, moveable.
85	F.	60	"	Small flap section upwards; iridectomy	Counts fingers; sees to go about			Had iritis; pupil became blocked; iridectomy downwards.
86	M.	55	"	Small flap section downwards; iridectomy	S 1 $\frac{1}{2}$ c + 2 $\frac{1}{2}$, $\frac{2.0}{1.0}$ c + 3.			
87	F.	48	"	Small flap section upwards; preliminary iridectomy	Counts fingers; sees to go about			Had severe iritis; preliminary iridectomy was performed in both eyes.
88	M.	36	Cortical	Small flap section upwards; iridectomy	Cannot read; tells time on watch c + 2 $\frac{1}{2}$.			
89	M.	59	Nuclear	Oblique corneal section downwards; preliminary iridectomy	S 2 $\frac{1}{2}$ c + 2 $\frac{1}{2}$, $\frac{2.0}{7.0}$ c + 4			Needle operation for opaque capsule.
90	M.	"	"	Small flap section downwards; preliminary iridectomy	S $\frac{2.0}{3.0}$ c + 4.			
91	F.	80	"	Small flap section downwards; iridectomy	S 2 $\frac{1}{2}$ c + 2 $\frac{1}{2}$, $\frac{2.0}{4.0}$ c + 3			No anæsthetic.
92	M.	70	"	Ditto	S 1 $\frac{1}{2}$ c + 2 $\frac{1}{2}$, $\frac{2.0}{3.0}$ c + 3			No anæsthetic.
93	"	"	"	Ditto	Eye lost			Suppuration of cornea; no anæsthetic.
94	M.	50	"	Small flap section upwards; iridectomy	S $\frac{2.0}{3.0}$ c + 3.			
95	F.	65	"	Oblique corneal section downwards. Small iridectomy	Counts fingers; sees to go about			Pupil is partially closed; has granular ophthalmia, for which she is still under treatment; will probably gain excellent vision after iridectomy upwards.
96	M.	43	"		S 3 c + 3 $\frac{1}{2}$, $\frac{2.0}{2.0}$ c + 6			Patient was myopic before extraction of cataract.

No.	Sex.	Age.	Eye.	Form of cataract.	Operation.	Result.	Remarks.
97	F.	28	L.	Cortical	Small flap section upwards; iridectomy	S $1\frac{1}{2}$ C + $2\frac{1}{2}$, $\frac{2}{10}$ C + 3.	<i>No anæsthetic.</i> Patient extremely unsteady; cataract removed with scoop; <i>some vitreous lost.</i> Anæsthetic given; no difficulty.
98	M.	63	L.	Nuclear	Small flap section downwards; iridectomy	S $2\frac{1}{2}$ C + $2\frac{1}{2}$, $\frac{2}{10}$ C + 3.	
99	M.	59	R.	"	Oblique corneal section downwards. Small iridectomy	S 2 C + $2\frac{1}{2}$, $\frac{2}{10}$ C + 3	
100	M.	"	L.	"	Small flap section upwards; iridectomy	S $2\frac{1}{2}$ C + $2\frac{1}{2}$, $\frac{2}{10}$ C + 3	
101	M.	59	R.	"	Ditto	S $2\frac{1}{2}$ C + $2\frac{1}{2}$, $\frac{2}{10}$ C + $3\frac{1}{2}$	Lens shrunken; removed with scoop; no vitreous lost.
102	M.	36	L.	Cortical (traumatic)	Small flap section upwards	S $6\frac{1}{2}$ C + $2\frac{1}{2}$, $\frac{2}{10}$ C + 3.	Cataract probably secondary to choroidal disease; some floating opacity in vitreous found after extraction.
103	M.	21	R.	Cortical	Small flap section upwards; iridectomy	S $6\frac{1}{2}$ C + $2\frac{1}{2}$, $\frac{2}{10}$ C + 3	
104	F.	20	L.	"	Ditto	Entirely successful	Patient had diabetes, and left the hospital before being tested with glasses; clear pupils in both eyes, and she could see to go about. <i>No anæsthetic.</i>
105	F.	"	R.	"	Ditto	Ditto	
106	M.	53	R.	Nuclear	Small flap section downwards; iridectomy	S 2 C + $2\frac{1}{2}$, $\frac{2}{10}$ C + 3	Ditto. Cataract secondary to choroidal disease; right eye blind and shrunken; excised at same time as preliminary iridectomy in left; patient deficient in intellect; has never learnt to read. Needle operation for opaque capsule; some floating opacity in vitreous.
107	M.	"	L.	"	Ditto	S 2 C + $2\frac{1}{2}$, $\frac{2}{10}$ C + 3	
108	F.	28	L.	Cortical	Oblique corneal section downwards; preliminary iridectomy	Counts fingers; sees to go about; three on watch C + $2\frac{1}{2}$	
109	M.	60	R.	Nuclear	Small flap section downwards; iridectomy	S $1\frac{1}{2}$ C $2\frac{1}{2}$, $\frac{2}{10}$ C + 3	
110	M.	63	R.	"	Small flap section upwards; iridectomy	S $1\frac{1}{2}$ C + $3\frac{1}{2}$, $\frac{2}{10}$ C + $4\frac{1}{2}$.	
111	F.	46	R.	Cortical (congenital)	Ditto	S $\cdot 5$ C + 16 D, $\frac{1}{10}$ C + 13 D.	
112	F.	45	R.	Nuclear	Ditto	S $\cdot 6$ C + 13, D,	

114	F.	"	R.	"	Ditto	choroidal disease.
115	M.	57	R.	Nuclear	Small flap section downwards; iridectomy	Needle operation for opaque capsule.
116	F.	61	L.	"	Ditto	Ditto.
117	F.	50	R.	"	Small flap section upwards; iridectomy	Right eye myopic.
118	M.	40	L.	"	Ditto	Severe iritis; iridectomy upwards; pupil again became closed; double iridectomy inwards and outwards.
119	F.	63	L.	"	Ditto	
120	F.	42	L.	"	Ditto	Much vomiting during operation, and, subsequently, vitreous bulged, but none escaped. Cicatrix bulging; pupil drawn towards section and blocked; iridectomy downwards; pupil again closed.
121	M.	51	R.	"	Oblique corneal section downwards; small iridectomy	Much straining during operation; small quantity of vitreous lost. <i>No anæsthetic.</i> Needle operation for opaque capsule.
122	M.	60	L.	"	Small flap section upwards; iridectomy	
123	M.	"	R.	"	Small flap section downwards; iridectomy	Eye became glaucomatous; large iridectomy upwards; relief of tension.
124	M.	40	L.	"	Ditto	
125	F.	55	R.	"	Ditto	
126	F.	70	R.	"	Small flap section upwards; iridectomy	Severe iritis; pupil closed; iridectomy downwards; pupil again closed; double iridectomy inwards and outwards; opaque membrane torn through with sharp hook; clear pupil.
127	F.	60	L.	"	Ditto	
128	M.	18	L.	Cortical (traumatic)	Ditto	

No.	Sex.	Age.	Eye.	Form of cataract.	Operation.	Result.	Remarks.
129	F.	67	L.	Nuclear	Small flap section downwards; iridectomy	S 1 c + 16 D, $\frac{6}{16}$ c + 13 D	<i>No anæsthetic.</i>
130	F.	64	L.	"	Ditto	S 5 c + 16 D, $\frac{6}{13}$ c + 13 D	Ditto.
131	M.	60	R.	Nuclear	Small flap section upwards; iridectomy	S 5 c 16 D, $\frac{6}{13}$ c + 11 D.	
132	M.	61	L.	"	Ditto	S 5 c + 16 D, $\frac{6}{13}$ c + 13 D.	
133	F.	64	R.	"	Ditto	Cannot read: counts S 12 at 6 meters c + 13 D; time on watch c + 16 D.	
134	F.	63	R.	"	Ditto	S 5 c + 16 D, $\frac{6}{13}$ c + 13 D.	
135	M.	61	R.	"	Ditto	S 5 c + 13 D, $\frac{6}{13}$ c + 10 D.	
136	M.	24	L.	Cortical	Ditto	S 6 c + 16 D, $\frac{6}{13}$ c + 13 D.	
137	M.	49	L.	Nuclear	Small flap section downwards: iridectomy	Can find his way about; cannot count fingers	Pupil closed by iritis; iridectomy upwards. Right eye had been excised some years before; probably choroidal diseases in left; much opacity in vitreous.
138	F.	94	R.	"	Small flap section downwards; preliminary iridectomy	S 6 c + 13, $\frac{6}{13}$ c + 11.	
139	F.	58	L.	"	Ditto	S 6 c + 16 D, $\frac{6}{13}$ c + 13 D.	Two needle operations for opaque capsule.
140	M.	55	R.	"	Small flap section upwards; iridectomy	Eye lost	Suppuration of cornea.
141	F.	66	R.	"	Ditto	S 5 c + 16 D, $\frac{6}{13}$ c + 12 D.	
142	F.	60	L.	"	Ditto	S 5 c + 16 D, $\frac{6}{13}$ c + 14 D.	

145	F.	68	L.	"	Ditto	$\frac{6}{15}$ C + 13 D. S 2.25 C + 16, $\frac{6}{16}$ C + 13 D.	No anæsthetic.
146	M.	68	R.	"	Small flap section down-wards; iridectomy	S 8 C + 15 D, $\frac{6}{15}$ C + 12 D.	No anæsthetic.
147	M.	78	L.	"	Small flap, section up-wards; iridectomy	S 1 C + 16 D.	Lens became displaced behind; iris removed with scoop; no vitreous lost.
148	F.	60	L.	"	Ditto	Time on watch, C + 16 D.	No anæsthetic.
149	F.	68	L.	"	Ditto	S 2.25 C + 16 D, $\frac{6}{15}$ C + 13 D.	No anæsthetic.
150	M.	68	R.	"	Small flap section down-wards; iridectomy	D 8 C + 13 D, $\frac{6}{15}$ C + 12 D.	No anæsthetic.

